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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/494,670	01/31/2000	Mory Benoit	PHF-99.507	3768

7590

01/09/2003

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EXAMINER

AN, SHAWN S

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 01/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/494,670

Applicant(s)

Mory Benoit

Examiner

Shawn An

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jan 31, 2000
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Jan 31, 2000 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

Response to Preliminary Amendment

1. As per Applicant's instructions in Paper 4 as filed on 1/31/00, claims 5-7 have been amended.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahanger et al (SPIE Proceedings series, 1995) in view of Altunbasak et al (6,389,168 B2).

Regarding claim 1, Ahanger et al discloses a descriptor (abs.) for the representation of motion of a camera in a video sequence, wherein the motion being at least one or several of the following basic operations:

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fixed, panning, tracking, tilting, booming, zooming, dollying, and rolling, or any combination of at least two of these operations (Fig. 1),

wherein each of the motion types, except fixed, is oriented and subdivided into two components that stand for two different directions (Fig. 1, see arrows, e.g.: panning, left or right; booming, up or down; and zooming, in or out).

Ahanger does not specifically disclose an histogram in which the values correspond to a predefined size of displacement.

However, Altunbasak et al teaches calculating motion histogram based on camera operations (Fig. 11, 100; col. 10, lines 15-26).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a descriptor for the representation of motion of a camera in a video sequence as taught by Ahanger et al to incorporate the concept of calculating motion histogram based on camera operations as taught by Altunbasak et al as a specific tool to identify such camera operations so that an user can retrieve video frames that include a query video object.

Regarding claim 5, Ahanger et al discloses the description being hierarchical, by means of a representation of the motion handles at any temporal granularity (Fig. 2).

5. Claims 1-2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyatake et al (5,267,034) in view of Altunbasak et al (6,389,168 B2).

Regarding claim 1, Miyatake et al discloses a descriptor (abs.) for the representation of motion of a camera in a video sequence, wherein the motion being at least one or several of the following basic operations:

fixed, panning, tracking, tilting, booming, zooming, dollying, and rolling, or any combination of at least two of these operations (Fig. 3),

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wherein each of the motion types, except fixed, is oriented and subdivided into two components that stand for two different directions (Fig. 1, see arrows, e.g.: panning, left or right; and zooming, in or out).

Miyatake et al does not specifically disclose an histogram in which the values correspond to a predefined size of displacement.

However, Altunbasak et al teaches calculating motion histogram based on camera operations (Fig. 11, 100; col. 10, lines 15-26).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a descriptor for the representation of motion of a camera in a video sequence as taught by Miyatake et al to incorporate the concept of calculating motion histogram based on camera operations as taught by Altunbasak et al as a specific tool to identify such camera operations so that an user can retrieve video frames that include the query video object.

Regarding claim 2, Miyatake et al discloses motion type having its own speed described in an unified way by choosing a common unit (col. 8, lines 17-45).

Regarding claim 7, Miyatake et al discloses an image retrieval system comprising a camera (abs.) for the acquisition of the video sequences, a video indexing device (Fig. 1, 16), a database (17), a graphical user interface (Fig. 1, SEARCH INPUT) for carrying out a requested retrieval from the database, and a video monitor (20) for displaying the retrieved information, wherein the indexing operation is based on the categorization resulting from the use of the descriptor of camera motions (19).

6. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyatake et al and Altunbasak et al as applied to claim 2 above, and further in view of Jeannin (5,929,940).

Regarding claim 3, the combination of Miyatake et al and Altunbasak et al does not particularly disclose motion type speed being represented by a pixel-displacement value working at the half-pixel accuracy.

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However, Jeannin teaches conventional method of motion estimation comprising motion type speed represented by a pixel-displacement value working at the half-pixel accuracy (Fig. 2, col. 8, lines 23-27). Furthermore, half-pixel motion vector is frequently used in current standard for predicted motion system, such as in MPEG and/or H.263.

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a descriptor for the representation of motion of a camera in a video sequence as taught by Miyatake et al to incorporate the well known concept of motion type speed being represented by a pixel-displacement value working at the half-pixel accuracy as taught by Jeannin as an efficient/conventional method to estimate the motion vectors between the two pixels.

Regarding claim 4, it is considered quite obvious and well known to simply round the speed (motion vector) to the closest half-pixel value, and multiply by 2, in order to obtain an integer value, thereby working with the simple (not having decimal) numbers.

Allowable Subject Matter

7. Claim 6 is objected to as being dependent upon a rejected base claims 1, but would be allowable: if claim 6 is rewritten in independent form including all of the limitations of the base claim 1 and any intervening claims.

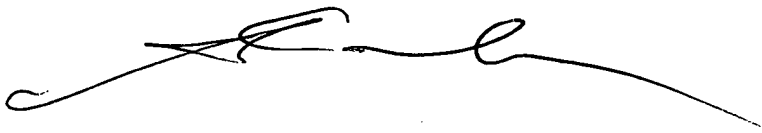
Dependent claim 6 recites novel feature wherein each motion type having a significant speed is computed and the temporal presence is represented by a percentage, defined as follows:
$$T \text{ type of motion} = (N \text{ type of motion} / N) \text{ (see the equation in claim 6).}$$

Accordingly, if the amendments are made to the claims listed above, and if rejected claims are canceled, the application would be placed in condition for allowance.

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Conclusion

8. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.
- A) Gotoh et al (5,809,202), Recording medium, an apparatus for recording a moving image, and an apparatus and a system for generating a digest of a moving image, and a method of the same.
 - B) Warnick et al (6,195,458 B1), Method for content-based temporal segmentation of video.
 - C) Yokoyama (6,456,660 B1), Device and method of detecting motion vectors.
 - D) Yokoyama et al (6,078,618), Motion vector estimation system.
9. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn An whose telephone number (703) 305-0099 and schedule are Tuesday-Friday.



SSA

January 7, 2003